STREETS AND SIDEWALKS
296 Attachment 1
Borough of Macungie
Exhibit 296-10
Specifications for the Construction of Curbs and Sidewalks
[Adopted 5-5-1985]

I. GENERAL REQUIREMENTS

The construction, reconstruction and/or repair of all curbs, sidewalks and driveway entrances in the Borough of Macungie shall conform to these specifications and the attached construction detail drawings. Whenever it shall be required by the Council of the Borough, it shall be the duty of the owners of lots, or real estate abutting on any public street or alley, to construct and/or reconstruct curbs, sidewalks, and driveway entrances with such material and in such a manner as hereinafter specified and according to the Regulations of the Borough.

II. INCONSISTENT SPECIFICATIONS

Whenever the provisions of these specifications shall be inconsistent with the provisions of the Borough of Macungie Subdivision Ordinance in effect as amended from time to time, and the provisions of said Subdivision Ordinance or any Subdivision Agreement are more restrictive or contain more stringent requirements than as set forth in these specifications, then the provisions of said Subdivision Ordinance or Agreement shall prevail and be applicable. Where the standard drawings and specifications of PennDOT are applicable, the Borough reserves the right to substitute the PennDOT standards for those of the Borough.

III. MATERIALS

The following material shall be used in the construction, reconstruction and repair of curb/sidewalk improvements (sources subject to approval by the Borough Engineer):

3:01 CRUSHED STONE BASE — Base material beneath all sidewalks and driveway entrances, and as fill on street side of curbs shall be No. 2A Crushed Aggregate as defined by the Pennsylvania Department of Transportation (PennDOT) Publication 408.

3:02 STRUCTURAL CONCRETE — All concrete used for the construction of curbs, sidewalks, and driveway entrances shall be Class A Cement Concrete according to Section 704.1(c)(2) of PennDOT Publication 408, shall have an ultimate 28 day compressive strength of 3500 pounds per square inch and shall contain 6% air by volume.

3:03 REINFORCEMENT — Steel reinforcement used for the construction of aprons and sidewalks at driveway entrances shall be 6 x 6 -W4 x W4 welded wire fabric (58 lbs./100 sq. ft.) conforming to the requirements of the American Concrete Institute. Reinforcement shall be placed to provide a minimum of two inches of cover from all concrete surfaces.

3:04 EXPANSION JOINT MATERIAL — Expansion joint material shall be 1/2 inch thick, premolded resilient fiber type conforming to AASHTO Designation M 33-70.

3:05 OUTLET PIPES — All new roof leader and area drain pipes shall be three inch diameter cast iron or polyvinyl chloride (ASTM Designation D3034) pipe and shall conform to the requirements of PennDOT Publication 408.

3:06 PAVING AND PAVING JOINT SEALING — Damaged bituminous paving along street side of curb to be neatly cut and replaced with a minimum of 2 1/2 inches thick ID-2 bituminous material in accordance with Section 305 of PennDOT Publication 408. Joint where paving meets curb to be sealed with hot PennDOT Class AC-20 asphalt cement conforming to PennDOT Bulletin 25.

IV. CONSTRUCTION REQUIREMENTS

Curbs, sidewalks and driveway entrances constructed, reconstructed or repaired must be in accordance with grades and lines furnished by the Borough Engineer and with the following provisions:

4:01 PERMIT REQUIRED — Any person, firm or corporation proposing to grade any sidewalk area, which is defined as the area located between the curb line and right-of-way of any Borough Street, alley, road or cartway, or proposing to construct or repair any curb, sidewalk and driveway entrance, shall first obtain a permit from the Borough Secretary, in accordance with the procedures and fee established by Borough Council.

4:02 GRADE AND SLOPE — The grade of all sidewalk areas shall conform to the adjacent curb grade, except that the sidewalk area shall slope 1/4 inch per foot, ascending from the outside face of curb.

4:03 TYPICAL CURB SECTION — All curbs shall consist of cement concrete and shall be a minimum of 22 inches in depth, six inches in width at the top and eight inches in width at the bottom, the front face having a batter and the back thereof to be vertical. The front face of the curb shall have a seven inch exposed vertical face (reveal) from the gutter line to the top of curb.

4:03.1 CURB RADIUS CONSTRUCTION — A radius curb shall be constructed at the intersection of all streets or alleys. The minimum radius of a curb at street intersection shall be six feet where feasible. The minimum radius of a curb at an alley intersection shall be the same as the width of the ordained sidewalk area along the street. The radius curbs shall be of the standard cross section for the entire length. All curbs at the intersection of public alleys shall extend along the alleys for the full width of the sidewalks

4:03.2 ROLLED CURB AND GUTTER — Rolled curbs shall be 12 inches deep, as measured from the top of the finished curb to the bottom of the inside face, 24 inches in total width, six inches wide at the top, and have return radius of 17 inches, except at corners where the return radius shall be 15 inches.

4:04 SIDEWALKS

4:04.1 — A three feet wide grass safety strip shall separate the curb from the sidewalk, except where the right-of-way width is not sufficient, or where it is necessary to match the existing sidewalk, in which case the concrete sidewalk shall be constructed next to the inside face of the curb. Where no grass safety strip presently exists and the existing sidewalk is to be repaired or replaced, then the Borough may direct that the grass safety strip requirement be waived and that the width of the sidewalk shall be as deemed necessary and appropriate under the particular circumstances.

4:04.2 — Surface gutters will not be permitted in newly constructed or reconstructed curb and sidewalk. All roof leaders and area drain pipes must outlet into the street gutter by means of a three inch diameter cast iron or polyvinyl chloride (PVC) plastic pipe placed within the new sidewalk and at least 2 1/2 inches beneath the top surface of the new sidewalk.

The pipe shall be placed through the new curb, with the outlet end of the pipe being a minimum of one inch above the gutter or flow line. A coupling sleeve shall be placed in the curb to accept the pipe. All joints to be sealed with pipe joint compound. Wire mesh is to be placed over the pipe for the full width of the sidewalk and at least two feet in length and weighing the equivalent of 57 pounds per 100 square feet. The wire mesh shall be placed one inch below the top surface of the sidewalk.

Where a suitable outlet cannot be obtained for the three inch pipe at the gutter flow line due to pavement buildup, a variance may be granted eliminating the use of said pipe. Where suitable outlets exist, and in lieu of placing pipe through the sidewalk, the use of a diamond plate trough will be accepted. The steel plate shall be 1/4 inch thick and properly anchored to the adjacent concrete sidewalk. The trough shall extend vertically downward for a variable depth to meet the existing conditions. Final approval for the use of diamond plate troughs shall be granted by the Borough Engineer.

4:04.3 — All sidewalks shall be constructed of Class A Cement Concrete, five inches thick and the surface shall have a 1/4 inch pitch per linear foot ascending from the face of curb. Sidewalks shall be 4.5 feet wide along local and collector streets and a minimum of five feet wide on arterial streets.

4:04.4 — It shall be the duty of all owners of property abutting a dedicated or opened public street or highway within the Borough to construct concrete ramps and crosswalks, when new installations of sidewalk and/or curb are made or when a replacement of an existing sidewalk and/or curb is made at street intersections or at established crosswalks so as to make the transition from street to sidewalk easily negotiable for handicapped persons in wheelchairs or other persons who may have difficulty in making the required step up or down from sidewalk level to street level. All ramps to be a minimum of four feet in width at the street gutter line, exclusive of curb and sidewalk tapers. Ramps to be sloped in a uniform slope to the street gutter, and no vertical face shall remain at the curb where the ramps meets the street gutter line. All ramps shall receive a coarse broom finish transverse to the slope of the ramp.

All such ramps shall be constructed or installed in accordance with the design and specifications prepared therefore by the Pennsylvania Department of Transportation. The cost for such installation shall be borne by the abutting property owner. The abutting property owners shall also keep the same in good repair.

4:05 DRIVEWAY ENTRANCES

4:05.1 — Driveway entrances shall have a minimum curb radius of two feet for single family residential developments and a minimum curb radius of four feet eight inches for multi-family developments, shall have the outside edge raised one inch above the flow line of the gutter, and shall have a uniform 1/4 feet slope therefrom to the prescribed outside edge of sidewalk. All driveway entrances shall have the same concrete finish and grade prescribed for curb and sidewalks. Aprons and sidewalks at all driveway entrances shall be reinforced concrete, eight inches minimum thickness. No single driveway entrance for a one-car garage shall be constructed to a width exceeding 12 feet. In lieu of a driveway entrance having curb radii as part of its construction, a depressed curb driveway entrance shall be used as set forth on the construction detail drawing attached hereto. No single driveway entrance for a garage for two or more cars shall be constructed to a width exceeding 22 feet.

4:05.2 — Driveway entrances for business establishments or industrial facilities shall have a minimum curb radius of two feet. The exact radius shall be subject to the approval of the Borough. The width of any single driveway entrance for a business establishment or industrial facility shall be subject to review and approval by the Borough.

4:05.3 — A crossover is that portion of a driveway extending from the property line of the sidewalk to the street side of the curb including the planting area between the curb and sidewalk, if any exists, for the full width of the driveway, including flared edges at the radii.

All crossovers are to be of reinforced cement concrete construction. Crossovers for residences, businesses and industries shall have a minimum thickness of eight inches of reinforced concrete. Reinforcing to be wire mesh 6" x 6" two inches below the surface weighting the equivalent of 57 pounds per 100 square feet.

A curb extending 15 inches below the gutter line shall be constructed along the street face of all crossovers. The top edge of the curb along the crossover shall be one inch above the gutter line and six inches below the top of the adjacent curb. The surface of the crossover paving shall extend from the top of the depressed curb at the gutter line with a uniform slope to the grade of the sidewalk at the property line side.

The maximum width of any residential crossover shall not exceed 22 feet including curb tapers. The maximum width of any commercial crossover shall not exceed 35 feet, including curb tapers. Any residential crossover greater than 22 feet or commercial crossover greater than 35 feet in width shall be subject to approval by the Borough Council. Any crossover greater than 35 feet in width shall be subject to approval of the Borough Council. All widths to be measured at the curbline.

Where the flared edge of a driveway controls the turning radius of a vehicle entering or exiting the driveway by a right turn from or onto the adjacent street traffic lane, the radius of that edge may be as long as practical, subject to approval of the Borough Engineer to provide a free and safe turning movement.

4:06 AREAS WHERE UTILITIES ARE PROHIBITED — No utility poles or other utility facilities shall be placed within the radius curb or radius sidewalk.

4:07 AREAS WHERE DRIVEWAYS ARE PROHIBITED — No driveway shall be constructed across or through any radius curb or radius sidewalk.

4:08 MONOLITHIC CONSTRUCTION PERMITTED — Curb and sidewalk may be constructed separately; monolithic construction of curb and sidewalk will be permitted.

V. INSTALLATION AND WORKMANSHIP

5:01 SUB-GRADE AND BASE PREPARATION — Excavation for construction of curbs, sidewalk and driveway entrances shall be performed as necessary to the required subgrade elevation. Sub-grade shall consist of undisturbed soil or approved fill material machine compacted to form a firm, stable subgrade. Prior to excavating for curb construction in areas where the proposed curb line abuts existing street or roadway pavement, the Contractor shall neatly sawcut the existing pavement no more than eight inches from the proposed face of curb. All curbs must be constructed on undisturbed or compacted soil; no stone shall be used for leveling. Sidewalks and driveway entrances shall be constructed on a compacted stone base, minimum four inches depth of PennDOT No. 2A crushed aggregate placed on the previously prepared sub-grade.

5:02 FORMS — All proposed concrete installations, either new construction or reconstruction, shall be formed. Constructing curbs, sidewalks, or driveway entrances without forms is prohibited. All forms shall be made of steel or wood, and shall be smooth, free from warp and sufficiently rigid to resist springing out of shape. All forms shall extend for the full depth of the curb or sidewalk to be installed. Forms shall be firmly held in place by stakes or rods and braces adequate in dimension and sufficient in number to prevent movement and to withstand the pressure of the concrete.

Steel forms shall be thoroughly cleaned and oiled and wood forms thoroughly cleaned and moistened prior to pouring concrete therein, and all forms shall remain in place at least 24 hours after completion of the pouring.

5:03 JOINTS

5:03.1 — Curb shall be constructed in uniform lengths or sections of 20 feet maximum length, except where shorter sections are necessary for closure of radii or curves, however, no curb section shall be less than four feet in length. Premolded resilient expansion joint material shall be placed transverse every 20 feet or between curb sections to the full curb depth and be cut to conform to the cross sectional area of the curb. Expansion joint material shall also be provided at points of tangency to curves or radii, and between the face of curb and sidewalk or other structures.

5:03.2 — Sidewalks shall be constructed in slab sections of 20 feet maximum length, except where shorter sections are deemed necessary for closure of radii or curves. Slab sections shall be separated by transverse expansion joints filled with premolded resilient expansion joint material as specified herein, for the full depth of the concrete. Expansion joints shall also be provided between sidewalks and adjacent curb, or other structures including but not limited to stormwater inlets, drainage facilities, intersecting private sidewalks, steps, porches, buildings, fire hydrants, street light footings and utility poles. All sidewalk slabs shall be transversely scored at intervals equal to the sidewalk width, however, in cases where the slabs are greater than six feet wide, a longitudinal score in the center of the slab shall be provided in addition to the transverse scoring. Where the sidewalk surrounds a fire hydrant, utility pole, street light, signpost, valve box, or other structure, score a block eight inches larger than the maximum dimensions of the structure. Prior to placing the concrete around such structures, premolded expansion joint filler, 3/4 inch in thickness shall be placed around the structure for the full depth of the concrete in the sidewalk.

5:04 PLACING CONCRETE — Construction of curb and sidewalk improvements shall be permitted only during the seasonal period beginning April 1, and ending on November 30 of each year. In addition, concrete shall not be placed on frozen or saturated subgrade, or when the ambient air temperature is less than 40° F. All concrete shall be placed in a manner to prevent segregation of aggregate, and as near to final position as possible. The depositing of a large quantity at a single point, and allowing it to flow, or the working of concrete along the forms will not be permitted. Where steel reinforcement is used, same must be pulled up into the pour to meet requirements of Section 3:03.

5:05 FINISHING CONCRETE — The top surfaces of all new sidewalks, curbs and driveway entrances shall be brought to the required elevation, struck off with a straight edge, and floated. Top surfaces shall be a uniform true plane. All exposed surfaces of curbs, sidewalks and driveway entrances shall have an even wood float rubbed finish, free of all honeycomb and surface defects. Finishing of concrete surfaces shall be accomplished by wetting the surfaces and rubbing with a carborundum stone to eliminate irregularities, until uniform color and texture is produced. Finishing shall be completed within 36 hours after placing the concrete in the forms. Corners or edges shall be slightly rounded by the use of an edger having a 1/4 inch radius or a carborundum stone. After the forms are removed, all irregularities in exposed surfaces shall be corrected satisfactorily. After removal of the forms, minor honeycombed areas shall be filled with mortar composed of 1 part of cement and 2 parts of fine aggregate. Major honeycombed areas will be considered as defective work and shall be removed and replaced.

SIDEWALK FINISH — The final finish for all walking surfaces shall be a broom finish applied transversely to the normal walking direction and providing a normally non-slip surface. The broom finish shall provide a scoring of the concrete of not less than 1/16 inch in depth. Steel or wood trowel finishes are not permissible. All edges of sidewalk shall be worked with an approved edging tool. In no case shall bituminous material of any kind be used as finished sidewalks nor used to patch, repair or seal existing concrete sidewalks or crossovers.

5:06. PROTECTING AND CURING CONCRETE — Immediately after finishing, all concrete shall be cured by either of the following methods: (1) an approved impervious, light colored or transparent plastic sheeting shall be placed and maintained in contact with the concrete surface; or (2) an approved, liquid curing compound meeting PennDOT Publication 408 requirements, shall be sprayed on all concrete surfaces. Curing shall continue for a minimum of five days after placing and finishing concrete. Methods of protecting and curing concrete during cool or cold weather shall be according to PennDOT Publication 408 and shall be subject to the approval of the Borough Engineer.

5:07 UTILITY SERVICES — Covers on valve boxes, cleanouts, and vents for utility services to individual properties shall be raised and/or lowered to the specified elevation. The person, firm or corporation installing the curb, sidewalk and/or driveway entrances, shall be responsible for notifying all involved utilities to request adjustment of utility services as may be required to properly construct the improvements.

5:08 TRAFFIC SIGNS — All traffic signs removed during construction of curb and sidewalk improvements shall be replaced in kind and at the same location by the person, firm or corporation performing the installation of said improvement.

5:09 PEDESTRIAN AND VEHICULAR TRAFFIC PROTECTION — Any person, firm, or corporation grading any sidewalk areas, constructing or repairing any curbs, sidewalks or driveway entrances, or removing any trees or shrubbery, or opening or excavating in or under any streets, alleys, or sidewalk areas, shall place suitable signs, barriers and/or lights so as to protect the users of streets, alleys, or sidewalk areas in the vicinity thereof from injury to person or property.

5:10 INSPECTION AND DEFECTIVE WORK — The Borough Engineer or any authorized Borough Official shall at all times have access to the construction of curb and sidewalk improvements for the purpose of observing and inspecting the work. First notice for inspection relative to concrete pouring of sidewalk and/or curb shall be given to the Borough not less than 24 hours in advance of the anticipated time of pour. Any concrete sidewalks, curbs, or driveway entrances which do not conform to the requirements of these specifications, may be rejected; all defective work shall be either corrected or removed as specified by the Borough.

5:11 TREES AND SHRUBBERY — The planting of trees of any type within the grass safety strip between curb and sidewalk or within three feet of the sidewalk edge, is permitted in the Borough Where trees of any type exist within the right-of-way of any Borough street, alley, road or cartway, the constructing or repairing of curb and sidewalk shall be as directed by the Borough.

At locations where existing trees along curbs are to remain, if sufficient space cannot be provided for installation of regulation curb, steel curb plates shall be used. The plates shall extend a minimum of seven inches below the street surface. The outside face (street side) shall be flush with the outside face of curb. The ends of the top of the plate must be flush with and anchored into the adjoining concrete curb as per attached detail.

5:12 OBSTRUCTION OF SURFACE DRAINAGE — No person shall fill in solidly the gutter flow line, generally known as gutter area, with any materials, at crossovers or at any other points along the curb line, which will block or divert the normal flow of surface water along established grades and/or cause obstruction or hazard for vehicles traveling along the curb line.

5:13 BACKFILL AND RESTORATION — After the removal of forms, the curb and/or sidewalk shall be backfilled evenly in front and back so as not to displace the curb and/or sidewalk.

Backfill behind the curb shall be made by using select soil material with no stones larger than two inches in diameter. This backfill shall be brought to the top of the curb unless the area is to be used as sidewalk. If no sidewalk is to be placed adjacent to the curb, the top four inches of backfill shall be free of stones larger than 1/2 inch in diameter and the surface shall be raked free of stones and seeded with approved grass seed. Backfill material within roadway and shoulder areas, both existing and proposed, shall consist of PennDOT No. 2A Crushed Stone Aggregate compacted by machine or hand tamping. All paved areas disturbed by the Contractor during curb and/or sidewalk construction shall be restored in kind. Materials and the manner in which restoration is performed shall be subject to the approval of the Borough Engineer.

5:14 STAKEOUT AND INSPECTION — The Owner or Contractor shall furnish, set and maintain grade stakes as required for the installation of curbs and, where applicable, prepare cut sheets for review by the Borough Engineer. Inspection during construction and final inspection for acceptance will be performed by Borough designated personnel.